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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/569,813

02/16/2006

Seiji Nakahata

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JAPAN

EXAMINER

PERT, EVAN T

ART UNIT

PAPER NUMBER

2826

MAIL DATE

DELIVERY MODE

08/19/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/569,813	Applicant(s) NAKAHATA, SEIJI	
	Examiner EVAN PERT	Art Unit 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4 is/are allowed.
- 6) ☒ Claim(s) 5 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 February 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>0206</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures 3A and 3B do not correlate with the descriptive text:

In Figs. 3A and 3B, the thickness "T2" should correspond to the thickness of spacers 12 (e.g. see [0031] to [0033]).

Correction or explanation is required.

Specification

2. The amended title, reading "III Nitride Single Crystal, and Manufacturing Method Therefor and Semiconductor Device Therewith," is objectionable since the disclosure does not set forth or properly claim structure of a novel "single crystal" or structure of a novel "semiconductor device".

An acceptable title is: --Manufacturing Method of III Nitride Single Crystal--.

Correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention:

According to MPEP 2173.05(p), it is acceptable to define a product in terms of the process it was made (i.e. "product-by-process"), but only "*so long as it is clear that the claim is directed to the product and not the process.*"

In the instant case, the claimed process results, for example, in a single crystal of GaN that is on the order of tens of microns thick [0062], but there is nothing structurally significant about the single crystal of GaN in view of the process because the *limitations are directed to the process and not the product*. See MPEP 2113.

For purposes of examination, the decidedly ambiguous scope of claim 5 includes a “single crystal” of “GaN,” grown on a base substrate, wherein the single crystal of GaN is, for example, 50um thick.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagahama et al. (US 6,172,382).

In view of the rejection under 35 USC 112 set forth above, the ‘382 reference anticipates claims 5 and 6 because the ‘382 reference discloses a 50um thick “single crystal” of “GaN” grown on a substrate [see Example 27 at col. 50, lines 62-64], wherein the single crystal of GaN is incorporated into a semiconductor device (e.g. depicted as part “100” in Fig. 4).

Allowable Subject Matter

5. Claims 1-4 are allowed.

Art Unit: 2826

6. The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose or suggest the claimed method, particularly characterized by growth of a III nitride single crystal on a substrate, with a liquid layer of 200um or less thickness formed between the substrate and a III nitride source material baseplate.

The claimed method advantageously sets forth a III nitride single crystal manufacturing method with increased yield and higher crystal growth rate [0013].

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to EVAN PERT whose telephone number is (571)272-1969. The examiner can normally be reached on M-F (7:30AM-3:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on 571-272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2826

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ETP

August 17, 2008

/Evan Pert/

Primary Examiner, Art Unit 2826